

## The Future of Preserving the Past

by *Daniel J. Cohen*

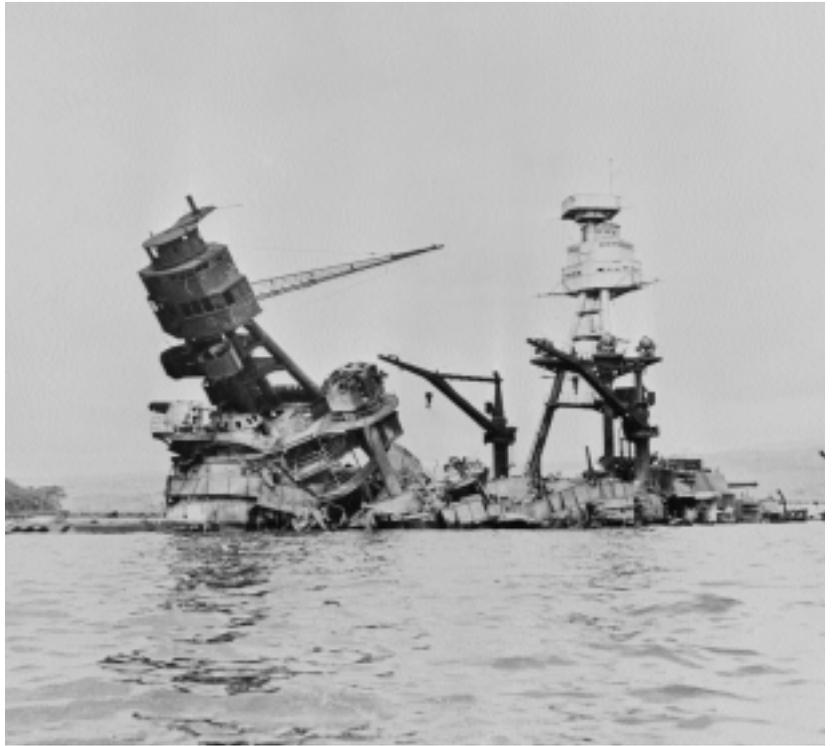
Consider the effort expended to save a rich and representative historical record of perhaps the two most tragic days in American history in the past century: December 7, 1941, and September 11, 2001. The National Archives preserved military photographs of the chaos at Pearl Harbor on December 7 as well as communications and damage assessments. The Office of Naval Records and Library recorded the names of those who died or were wounded. Meanwhile, other government branches and institutions undertook more wide-ranging preservation activities. The Library of Congress acquired the annotated typescript of the National Broadcasting Corporation's breaking news account. In addition to saving military records, the National Archives catalogued the reactions of government officials in public announcements and private correspondence. The National Park Service administers the *USS Arizona* Memorial of Pearl Harbor in Hawaii to preserve the underwater remains of the ship, while providing visitors a sense of the day's events and repercussions. (Figure 1)

In a mode more active than reactive, others sought to save the character of the Pearl Harbor attack by seeking out the views of average Americans. Pioneering folklorist Alan Lomax, working at the Library of Congress's Archive of American Folk Song, sent out an urgent telegram on December 8 to like-minded colleagues around the country imploring them to record the sentiments of the American people. In the next three days these interviewers, using cutting-edge technologies such as direct-to-disc machines that recorded sound directly onto platters that could be played immediately like normal records, gathered commentary from dozens of people in 15 states—a total of 4 1/2 hours of powerful expression. In subsequent years, historians have mined other national and local archives, letters and diaries, and the memories of Americans and Japanese to create a comprehensive picture of this day of infamy.

Sixty years later, on and after another day of infamy, September 11, 2001, professional and amateur archivists and historians again sought to record the aftermath of a horrific event. Widely varying initiatives began almost immediately, engaging in selective acquisition and broad opportunism, active outreach to historical subjects and passive collecting of artifacts, short-term haphazard gathering and careful long-term preservation. Projects modeled on those of 1941 quickly arose. At Columbia University, the Oral History Research Office and the Institute for Social and Economic Research Policy created the

FIGURE 1

*An official United States Navy photograph captures the USS Arizona following the attack on Pearl Harbor on December 7, 1941. In 1944, the Office of War Information's Overseas Picture Division transferred the film of this image to the Library of Congress. (Courtesy of Prints and Photographs Division, Library of Congress)*



September 11, 2001 Oral History Narrative and Memory Project, which has conducted more than 300 interviews with people affected by the terrorist attacks in New York, New Jersey, and the Boston and Washington, DC, regions, including interviewees who escaped the World Trade Center or lived in its shadow and Afghan and Muslim immigrants.<sup>1</sup> As it had 60 years earlier, the American Folklife Center at the Library of Congress, the descendant of the Archive of American Folk Song, sent out a notice to folklorists across the United States to record the “thoughts and feelings expressed by average citizens.” This distributed network of oral historians donated approximately 300 hours of audiotape to the library, collected in 19 states and a military base in Italy.<sup>2</sup> The library’s September 11, 2001 Documentary Project also gathered a smaller number of video interviews, written narratives, drawings, and photographs.<sup>3</sup>

Despite the efforts following September 11, which were orders of magnitude larger than those of Lomax and his small band of colleagues, the nature of the historical record had changed in many ways. Media no longer meant the radio broadcasts of a few national networks but now meant hundreds of audio and video broadcasts. Far more expansively, the record of 9/11 was to be found in new media such as websites, email, and other forms of electronic communication and expression, forms that have become an increasingly significant part of America’s and the industrialized world’s cultural output.

To be sure, in the weeks and months after September 11, museums, libraries,

and archives began to address the changing nature and scope of the historical record. In doing so, however, they had to abandon, at least in part, well-established models drawn from oral history and archival science. The explosion of historical sources in a digital age necessitated this evolution in preservation tactics. For example, whereas photographs of the attack at Pearl Harbor number at most a few thousand—the largest collection, at the National Archives and Records Administration, comprises a mere 5 boxes with about 200 images in each box—the photographic record of September 11, 2001, likely numbers in the millions of images. Indeed, with the proliferation of personal cameras since 1941, and especially with the spread of digital cameras in the last decade, 9/11 may be among the most photographed events in history.

Given the enormous size of the photographic record of 9/11, a variety of organizations, not just those in the preservation business, have had little trouble building impressive archives. The United States National Institute of Standards and Technology (NIST), as part of its investigation into why structural elements in the twin towers failed, gathered more than 6,000 images from 185 professional and amateur photographers, from almost every conceivable angle and covering virtually every moment, and in some cases fractions of a second, of the towers' collapse.<sup>4</sup> As seen in the remarkable *Here is New York* "democracy of photographs" collection of 5,000 images from hundreds of contributors, each photographer literally as well as figuratively had his or her own perspective on the event.<sup>5</sup>

Some preservation institutions recognized the proliferation and importance of new digital media. Looking to supplement their standard accessions of the printed editions of newspapers after September 11, the Library of Congress, in partnership with the Internet Archive, WebArchivist.org, and the Pew Internet and American Life Project, archived 30,000 websites from September 11 to December 1, 2001. This massive collection of digital materials will undoubtedly be of great value to future researchers. But even this impressive undertaking saved less than *one-thousandth* of the roughly 32 million websites in existence in September 2001.<sup>6</sup>

Others took a more active role, soliciting a variety of digital reactions and artifacts through online projects not dissimilar from Alan Lomax's grassroots effort to capture a wide range of perspectives from across the country after the Pearl Harbor attack. The September 11 Digital Archive at the Center for History and New Media at George Mason University, co-produced by the American Social History Project/Center for Media and Learning at the City University of New York Graduate Center, which I co-directed, tried to capture digital sources from everyday people. We used a website, available at <http://911digitalarchive.org>, digital telephone lines, and less technologically sophisticated methods like note cards that were later scanned, to save personal stories, emails, photographs and works of art, instant messages, pager commu-

FIGURE 2

*The remnants of 1 World Trade Center following the September 11, 2001, terrorist attacks are recorded in this digital photograph made by a Goldman Sachs employee who worked across the street. Now part of the September 11 Digital Archive, this image accompanied the photographer's vivid email recollections. (Photograph by David Bendory, courtesy of September 11 Digital Archive)*



nications, and other forms of expression and communication from 9/11 and its aftermath. Thus far the archive has collected more than 150,000 items from thousands of individual contributors. In the fall of 2003, the collection was accessioned by the Library of Congress, one of the library's first major digital acquisitions.<sup>7</sup> (Figure 2)

### Concerns About Digital Collections

The vast expansion of the historical record into new media between December 7, 1941 and September 11, 2001 presents serious challenges that will have to be surmounted in the coming years if future scholars and the public are to have access to an adequate record of the past. Yet despite the urgency of dealing with this mutating record, many in the cultural heritage community have major reservations about digital collecting, due in part to an understandable aversion to the complicated hardware and software involved, but more importantly because of some very real concerns about the nature of online work. At the same time that the web has enabled an exponential increase in cultural production, some argue that online collecting misses those older, less educated, or less well-to-do subjects who may not have access to the necessary technology.<sup>8</sup> Furthermore, the shift from analog to digital entails a change from well-known and relatively stable forms such as paper to forms for which the preservation path is unclear.

Digital collections are characterized as being shallow and less useful for research than traditional archives, for which provenance and selection criteria

are critical. It is unrealistic to expect that the Library of Congress could pre-screen 30,000 websites for quality or relevance to 9/11. The staggering numbers possible in digital collecting renders ineffectual some central tenets and time-honored procedures of archival and library science. Another common problem, encountered by many online collecting projects that actively solicit digital materials, is the opposite of this abundance: the failure to collect much at all because few people hear about or contribute to their websites. An inverse relationship between the quantity of digital artifacts gathered and the general quality of those artifacts may exist.<sup>9</sup>

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Digital collections are indeed more susceptible to problems of quality because they often lack the helpful selection bias of a knowledgeable curator and the pressure to maintain strict criteria for inclusion engendered by limited physical storage space. Web collections formed around the submissions of scattered contributors or thousands of websites and blogs have a very different character from traditional archives. Digital collections tend to be less organized and more capricious in what they cover.

On a more positive note, digital archives can be far larger, more diverse, and more inclusive than traditional archives. Perhaps the most profound benefit of online collecting is an unparalleled opportunity to allow more varied perspectives in the historical record than ever before. Networked information technology can allow ordinary people and marginalized constituencies not only a larger presence in an online archive, but also generally a more important role in the dialogue of history. “The Net is a people’s medium: the good, the bad and the ugly,” Brewster Kahle, the founder of the Internet Archive, has said. “The interesting, the picayune and the profane. It’s all there.”<sup>10</sup>

A less obvious but perhaps more important measure of the “quality” of a digital historical collection becomes apparent when the collection is assessed as a whole. Like any collection, there will be a minority of striking contributions among a sea of mundane or seemingly irrelevant entries. Historians who have browsed box after box in a paper archive trying to find key pieces of evidence for their research will know this principle well. The propensity of digital collectors to save virtually everything given the low cost of digital storage and the difficulty of using selection criteria may make these percentages worse. Yet, a few well-written perspectives or telling archival images may form the basis of a

new interpretation, or help to buttress an existing but partial understanding of a historical moment. At the same time, the greater size and diversity of online collections allow more opportunities to look for patterns. Why do certain types of stories recur? What does that reveal about popular experience and the ways that experience is transformed into memory?

Because of a digital collection's superior ability to be searched, historians can plumb electronic documents in revealing and novel ways. The speed of analysis can enable quick assessments of historical collections and more substantive investigations. For instance, when historian Michael Kazin used search tools to scan the September 11 Digital Archive for the frequency of words such as "patriotic" and "freedom" he came to some important conclusions about the American reaction to the terrorist attacks. Kazin discovered that fewer Americans than one might imagine saw 9/11 in terms of nationalism or another abstract framework. Instead, most saw the events in personal and local terms, the loss of a friend, the effect on a town or community, the impact on their family or job.<sup>11</sup>

### Active Solicitation of Digital Materials

Reaching out to and interacting with historical subjects online, either in real time or asynchronously, is far more economical than traditional oral history. With subjects writing their own narratives, the cost of transcription is avoided. While live individual interviews are often quite thorough and invaluable resources, online initiatives to collect personal histories can capture a far greater number at lower cost and acquire associated digital materials, such as photographs, just as cheaply.

Of course, even if highly successful in the future, online interaction with historical subjects will not mean the end of traditional ways of gathering recent history. As oral historian Linda Shopes observes, newer technological methods will have a hard time competing with many aspects of the oral historian's craft: "the cultivation of rapport and...lengthy, in-depth narratives through intense face-to-face contact; the use of subtle paralinguistic cues as an aid to moving the conversation along; the talent of responding to a particular comment, in the moment, with the breakthrough question, the probe that gets underneath a narrator's words."<sup>12</sup> Instead, using the Internet will likely complement these older methods.

Acquiring historical materials and recollections online is more difficult than setting up a rudimentary website because it entails digital tools to receive, process, and store submissions. To adequately capture the past in this way, more technical hurdles must be surmounted to allow for historical documents and artifacts to flow inward rather than merely outward, as they do on the web pages of most museums, archives, and historical sites.

The good news is that online interactivity is becoming easier each year. The same digital technologies that have made the historical record proliferate into new forms give us the best hope to capture that record. Not everyone needs a custom-programmed archival system such as the one constructed for the September 11 Digital Archive. Much of the infrastructure and software required to do simple or even moderately complex online collecting is available and cultural institutions and independent scholars should take advantage of these technologies.

Probably the oldest and still quite useful technology for online collecting is email, the choice of some of the most successful projects. Keith Whittle's Atomic Veterans History Project, devoted to the community of veterans who participated in nuclear testing during the Cold War, has collected and posted more than 600 personal narratives from former soldiers, acquired solely through email. As Whittle discovered, emailers include attachments such as scanned photographs, many of which grace the website alongside the narratives. Email also allows for long-term interactions, follow-up, and detailed exchanges. An online collecting project can get started right away with a simple web design that uses email links to encourage and accept submissions.<sup>13</sup>

Blogs have given millions of Internet users a taste of what it is like not just to read and view the web, but also to post to it. Many ways of maintaining a blog also allow for more than one person to post and for contributors to add images and multimedia files, creating an ever-expanding and multifaceted discussion about topics of interest. The ease with which one can add materials makes blogs an attractive possibility for a basic collecting site. Blogs have built-in search features and the ability to export whatever is collected to other locations.<sup>14</sup>

New forms of instantaneous communication on the Internet will further expand the toolkit for collecting history online. Millions are now using instant messaging (IM) software that permits real-time communication with individuals around the globe. Although they do not have the tonal inflections of a spoken dialogue, these typed conversations have the advantage of being self-documenting, unlike oral history interviews, which require expensive transcriptions. More recent versions of these IM programs also allow rudimentary audio and video chats, which opens up the possibility of a future that is much like the past of traditional oral history. Technical concerns such as installing and configuring appropriate software and hardware for digital collecting should recede, ultimately, into the background.

What will remain in the foreground are the qualitative concerns, especially the question of provenance raised by the solicitation of historical materials from unseen contributors. Given the slippery character of digital materials, how can we ensure that what we receive over the Internet is authentic, or that historical narratives we receive really are from the people they say they are?

Some of these worries are relatively easy to address. Concern about the falsification of digital historical documents and metadata (information about such artifacts) has mostly turned out to be a phantom problem.<sup>15</sup> I am not alone in this assessment. Newspaper websites have found that relatively few people enter fake information. In one study, the *Philadelphia Inquirer* discovered that only 10 to 15 percent of their 300,000 registered users had entered bad email addresses, and some of those were merely by accident or due to technical difficulties. Zip codes and other less problematic bits of personal information are falsified at an even lower rate.<sup>16</sup>

The nonprofit mission of online historical archives should produce even higher rates of honesty. Most people who take the time to submit something to a digital project share a cultural institution's or dedicated researcher's goals and interest in creating an accurate historical record. In addition, some technical methods can help double-check online contributions. Every computer connected to the web has an Internet Protocol (IP) address. A small bit of programming code can capture this address. If a researcher is skeptical that a contribution has come from a specific person or location, a WHOIS search, which translates an IP address into a semi-readable format that often includes a contributor's Internet service provider and broad area of service, may result in helpful information.<sup>17</sup> Less cloak-and-dagger is a simple email or telephone follow-up with a contributor to thank them for their contribution; this presents an opportunity to ask contributors if they might have any other documents or recollections and whether they might know of other contacts.

The best defense against online fraud comes from traditional skills. Historians have always had to assess the reliability of their sources. Countless notable forgeries exist on paper. As Donald Ritchie has pointed out, written memoirs and traditional oral histories are filled with exaggerations and distortions.<sup>18</sup> Historians will have to continue to look for evidence of internal consistency and weigh them against other sources. In any media, new or old, solid research is the basis of sound scholarship.

Despite the challenges and insecurities surrounding digital collecting, it has become a burgeoning practice. Recently, for example, the British Library, the Victoria and Albert Museum, the Museum of London, and a number of other British museums and archives pooled their resources to display and collect stories of immigration to the United Kingdom in a project called Moving Here. Thus far the project has posted almost 400 stories and artifacts, mainly digitized versions of existing archive records but also new materials acquired via the site, ranging from a documentary video on Caribbean life to the reflections of recent African immigrants. The British Broadcasting Corporation's online project to gather the stories of Britain's World War II veterans and survivors of the London Blitz, entitled WW2 People's War, has been even more successful, with over 1,000 narratives gathered through the BBC's website after only 8 months, including dozens of harrowing accounts of D-Day.<sup>19</sup>

In the United States, the National Park Foundation, the National Park Service, and the Ford Motor Company are using the Internet to collect first-hand narratives of life during wartime for the Rosie the Riveter/World War II Home Front National Historical Park in Richmond, California. So far more than 6,000 former home front workers have contributed stories. *National Geographic's* Remembering Pearl Harbor site has received over 1,000 entries in its memory book. Over 500 people have recorded their personal stories and artifacts of the Civil Rights Movement on a site co-sponsored by the American Association for Retired Persons, the Leadership Conference on Civil Rights, and the Library of Congress. The Alfred P. Sloan Foundation has supported dozens of online collecting projects on science and technology in the belief that the history of these subjects is growing much faster than our ability to gather it through more conventional means.

Although there remains a healthy skepticism in the oral history community about the usefulness and reliability of narratives collected online, several new projects by major oral history centers demonstrate the benefits of online collecting. Even Columbia University, the home of the nation's first oral history program, is encouraging alumni to join in writing Columbia's history by contributing stories online.<sup>20</sup>

### **Saving Existing Digital Sources**

The main challenge for those interested in a more passive form of digital collecting is how to preserve what is collected for the long term. This is a serious challenge faced by actively acquired digital collections as well. Electronic resources are profoundly unstable, far more so than physical objects like books. The foremost American authority on the longevity of various media, NIST, still cannot give a precise timeline for the deterioration of many of the formats we currently rely on to store precious digital resources.

A recent report by NIST researcher Fred R. Byers notes that estimates vary from 20 to 200 years for popular media such as the CD and DVD. Anecdotal evidence shows that the imperfect way most people and institutions store digital media leads to much faster losses. For example, a significant fraction of collections from the 1980s of audio CDs, one of the first digital formats to become widely available to the public, may already be unplayable. The Library of Congress, which holds roughly 150,000 audio CDs in conditions almost certainly far better than those of personal collections, estimates that between 1 and 10 percent of the discs in their collection already contain serious data errors.<sup>21</sup>

Moreover, nondigital materials are often usable following modest deterioration, while digital objects such as CDs frequently become unusable at the first sign of corruption. We have gleaned information from letters and photographs

discolored by exposure to decades of sunlight, from hieroglyphs worn away by centuries of wind-blown sand, and from papyri partially eaten by ancient insects. By contrast, a stray static charge or wayward magnetic field can wreak havoc on the media used to store digital sources.

Beyond the possibilities of data corruption, all digital objects also require a special set of eyes, often unique hardware, and an accompanying operating system and application software, to view or read them properly. The absence of these associated technologies can mean the effective loss of digital resources, even if those resources remain fully intact. There have already been several versions of HTML, the underlying language of the web, enough to cause many of the web pages created in the early 1990s to be partially unreadable. The University of Michigan's Margaret Hedstrom, a leading expert on digital archiving, bluntly wrote in a recent report on the state of the art, "No acceptable methods exist today to preserve complex digital objects that contain combinations of text, data, images, audio, and video and that require specific software applications for reuse." In short, historians, archivists, librarians, and museum curators, even those strongly committed to the long-term preservation of recent history, enter uncharted waters when they try to save the past digitally.<sup>22</sup>

Computer scientists and digitally savvy librarians and archivists are working on possible solutions to these challenges, from software like the Massachusetts Institute of Technology Libraries' and Hewlett-Packard's DSpace or the University of Virginia's and Cornell University's Fedora, and through broad initiatives like the Library of Congress's National Digital Information Infrastructure and Preservation Program. But we are still in the very early stages of the creation of these new digital archives, and many prototypes and methods will undoubtedly disappear. Most readers of this article will not become active participants in these complex projects, but they are worth keeping an eye on to understand when possible solutions might become available.<sup>23</sup>

Worrying too much about the long-term fate of digital materials in many ways puts the cart ahead of the horse. The average web page exists for a mere 44 days, after which it can never be reproduced. Instead of worrying about long-term preservation, most of us should focus on acquiring the materials in jeopardy in the first place and on shorter-term preservation horizons, 5 to 10 years, through well-known and effective techniques such as frequent backups stored in multiple locations and transferring files regularly to new storage media, such as from aging floppy discs to DVD-ROMs. If we do not have the artifacts to begin with, we will never be able to transfer them to one of the more permanent digital archives being created by the technologists.<sup>24</sup>

## Taking First Steps

The importance of moving quickly to save extant digital materials is exceedingly evident in the case of 9/11. People turned to the Internet as a “commons”; it became a place to communicate and comment and share their feelings and perspectives. For example, nearly 20 million Americans used email to rekindle old friendships after 9/11. Thirteen percent of Internet users participated in online discussions after the attacks. People approached the Internet as a place to debate the United States government’s response to terrorism (46 percent), to find or give consolation (22 percent), and to explore ways of dealing locally with the attacks and their aftermath (19 percent). Rather than in tangible diaries and letters, there was an outpouring of thoughts and emotions in thousands of blogs on September 11 and the following days, and in millions of emails and instant messages.

“For the first time,” wrote one electronic newsletter editor, “the nation and the world could talk with itself, doing what humans do when the innocent suffer: cry, inform, and most important, tell the story together.” Just four years later, many of these potent reactions already have been permanently lost in a discarded email or blog account, to willful or unconscious deletion, or on the unrecoverable magnetic surface of a crashed hard drive. Had the Library of Congress and its partners decided months later, instead of within mere hours, to save the web pages from 9/11 and immediately afterwards, many already would have vanished into the digital ether.<sup>25</sup>

Humans have always found ways to express their feelings and their history to each other and to a wide audience. Today this is being done increasingly in digital rather than analog forms, instantaneously to a vast global audience. In an age in which a significant segment of the record of modern life exists in digital form—a segment that will only grow in the years to come—ways will need to be found to capture digital documents, messages, images, audio, and video before they are altered or erased if our descendants are to understand how we lived. A future in which the cultural heritage community does not make extensive use of digital technologies as part of their mission is difficult, if not impossible, to imagine. Much more can, and must, be done if those interested in preserving a robust historical record are to fulfill their mission in the 21st century.<sup>26</sup>

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our book *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web* (Philadelphia: University of Pennsylvania Press, forthcoming in 2005). I would also like to thank Tom Scheinfeldt for equally valuable collaboration, for his thoughts and writings on this topic and for his incredibly nimble direction of the September 11 Digital Archive and the Echo Project. I have been helped greatly by the research assistance of a number of my other colleagues at the Center for History and New Media at George Mason University, especially Joan Fragaszy.

## Notes

1. Oral History Research Office, Columbia University, *September 11th 2001 Oral History Narrative and Memory Project*, <http://www.columbia.edu/cu/lweb/indiv/oral/sept11.html>, accessed May 11, 2005; Mary Marshall Clark, "The September 11, 2001, Oral History Narrative and Memory Project: A First Report," *Journal of American History* 89 (September 2002): 569-579.
2. American Folklife Center, The Library of Congress, *September 11, 2001 Documentary Project*, <http://www.loc.gov/folklife/nineeleven/index.html>, accessed May 11, 2005.
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7. The Center for History and New Media at George Mason University and the American Social History Project/Center for Media and Learning at the Graduate Center at the City University of New York, *The September 11 Digital Archive*, <http://911digitalarchive.org>, accessed May 11, 2005.
8. According to the Netcraft web server survey in February 2005. See [http://news.netcraft.com/archives/web\\_server\\_survey.html](http://news.netcraft.com/archives/web_server_survey.html), accessed May 11, 2005, for the latest numbers.
9. On the vast digital corpus of the Clinton White House, see Adrienne M. Woods, "Building the Archives of the Future," *Quarterly* 2, no. 6 (December 2001), [http://www.nasm.si.edu/research/arch/temp/marac/the\\_quarterly/Dec2001.html](http://www.nasm.si.edu/research/arch/temp/marac/the_quarterly/Dec2001.html), accessed May 11, 2005. On the strange potential of future digital archives to contain either enormous numbers of documents or very few, see Roy Rosenzweig, "Scarcity or Abundance? Preserving the Past in a Digital Era" *American Historical Review* 108, no. 3 (June 2003): 735-762. For more on how to create a successful online collecting project, and how to promote it, see Daniel J. Cohen and Roy Rosenzweig, *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web* (Philadelphia: University of Pennsylvania Press, forthcoming in 2005), chapters 5-6.
10. As quoted in Lee Dembart, "Go Wayback," *International Herald Tribune*, March 4, 2002, [http://www.iht.com/articles/2002/03/04/itendo4\\_ed3\\_.php](http://www.iht.com/articles/2002/03/04/itendo4_ed3_.php), accessed May 11, 2005.
11. Michael Kazin, "12/12 and 9/11: Tales of Power and Tales of Experience in Contemporary History," *History News Network*, September 11, 2003, <http://hnn.us/articles/1675.html>, accessed May 11, 2005.

12. Linda Shopes, "The Internet and Collecting the History of the Present," paper presented at *September 11 as History: Collecting Today for Tomorrow*, Washington, DC, September 10, 2003. For more on this "rapport" and the way rich historical accounts arise during the live interaction of interviewer and interviewee, see Alessandro Portelli, *The Battle of Valle Giulia: Oral History and the Art of Dialogue* (Madison: The University of Wisconsin Press, 1997) and Michael Frisch, *A Shared Authority: Essays on the Craft and Meaning of Oral and Public History* (Albany: State University of New York Press, 1991).

13. Keith Whittle, *Atomic Veterans History Project*, <http://www.aracnet.com/~pdxavets/>, accessed May 11, 2005.

14. There are two main types of blogging systems: those hosted on one's own server and those hosted on a blog company's server. Certain versions of both types are free, though there are also paid versions that have more features. By far the three most prevalent hosted blogging systems are Blogger, owned by Google, <http://www.blogger.com>, accessed May 11, 2005, LiveJournal, run by a small team of software developers and staff, <http://www.livejournal.com>, accessed May 11, 2005, and AOL Journals, owned by Time Warner, <http://hometown.aol.com>, accessed May 11, 2005. Although it exists in a commercial version, LiveJournal can also be downloaded for free and installed on your server. LiveJournal and Six Apart's Movable Type, <http://www.moveabletype.org>, accessed May 11, 2005, are the predominant do-it-yourself blogging systems (Six Apart also runs a commercial hosting service for Movable Type blogs called TypePad, <http://www.typepad.com>, accessed May 11, 2005).

Many other free and commercial blog sites and programs (including the open source WordPress) exist for those who find the dominant software and hosts too basic, or who demand other features like message encryption or the automatic resizing of images for web display. A full list of software packages can be found at [http://en.wikipedia.org/wiki/Weblog#Blogging\\_systems](http://en.wikipedia.org/wiki/Weblog#Blogging_systems), accessed May 11, 2005, and hosts for a variety of blog packages can be found at [http://directory.google.com/Top/Computers/Internet/On\\_the\\_Web/Weblogs/Tools/Hosts/](http://directory.google.com/Top/Computers/Internet/On_the_Web/Weblogs/Tools/Hosts/), accessed May 11, 2005. In general, however, the top four systems will be suitable in most cases. Two of the more sophisticated blogging systems are the free *Nucleus CMS*, <http://www.nucleuscms.org/>, accessed May 11, 2005, and pMachine's *ExpressionEngine*, <http://www.pmachine.com/expressionengine/>, accessed May 11, 2005.

More information on blogs can be found in National Institute for Technology & Liberal Education, "Market Share," *NITLE Blog Census*, <http://www.blogcensus.net/?page=tools>, accessed May 11, 2005; Weblogs Compendium, "Blog Tools" and "Blog Hosting," <http://www.lights.com/weblogs/tools.html>, accessed May 11, 2005, and <http://www.lights.com/weblogs/hosting.html>, accessed May 11, 2005.

15. My rough estimate is that over the last 4 years less than 10 percent of the nearly 1,000 submissions to the Echo Project, a set of experimental online collecting efforts in the recent history of science, technology, and industry, have been off-topic or suspect. Center for History and New Media, *Echo Project*, <http://echo.gmu.edu>, accessed May 11, 2005.

16. San Jose Mercury News, "Web Newspaper Registration Stirs Debate," [Mercurynews.com](http://www.mercurynews.com/mld/mercurynews/8915529.htm), June 13, 2004, <http://www.mercurynews.com/mld/mercurynews/8915529.htm>, accessed June 2, 2005. Online collecting projects that focus on sensitive topics obviously may encounter more resistance to revealing accurate personal information. See R. Coomber, "Using the Internet for Survey Research," *Sociological Research Online*, 2, no. 2 (1997), <http://www.socresonline.org.uk/2/2/2.html>, accessed May 11, 2005.

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## Stewarding the Future

by David Lowenthal

“Think of your forefathers! Think of your posterity!”

—John Quincy Adams, December 22, 1802

Sustainability is an iconic term in conservation stewardship. It implies a commitment to manage natural and cultural resources to ensure their continuance into an indefinite future. But how far ahead is that? No general agreement emerges. There is only a general assumption that it applies to a period beyond our own lifetime. For some, this means a concern merely for the next generation or two, while for others it involves many millennia, even an incalculably remote future.

Many reasons are advanced for a futurist stance. Some are ethical: it is only fair that future generations inherit a world that we have not shorn of health and wealth. Some are conscientious: we prefer to be blessed as good stewards rather than to be cursed as despoilers. Some are familial: we hope that our grandchildren will inhabit a world at least as fruitful as our own. Others are pragmatic: intergenerational equity is not merely just, it also helps to promote social stability and political well-being in the present. Moreover, active concern for a time beyond our own enhances not only our successors' lives but also our own.

Which if any of these futurist arguments are generally accepted and how far they are put into practice depend on culture and zeitgeist. So does the kind of time to which future concern applies. For example, the future as envisaged by science fiction in the West is almost always conceived in secular terms, forward from our own epoch, whereas outside the West, time is usually cyclical or recursive, wholly unlike mundane linear experience.<sup>1</sup> In the West many continue to regard eternity as a foreign country. Perturbed by daily auguries of global doom, I found it consoling to be assured, in a recent notice, that though old-style 20-pound notes would cease to be legal tender, they would nonetheless “remain payable at the Bank of England for all time.” A cleric chided *The Times* of London for heading a letter “From here to eternity,” for however protracted the longevity of the Bank of England, it was nonetheless temporal, “eternal investments [being] of a wholly different currency.”<sup>2</sup>

Pious expressions of future concern are currently fashionable in commerce and politics alike. “You never actually own a Patek Philippe,” says the watch-

maker; “you merely look after it for the next generation.” “We’re developing the cures of the future,” a pharmaceutical company touts its research program; “we’ll care for your great-great grandchildren.” Picturing a baby with a mobile phone, Nippon Telegraph & Telephone boasts that “we’re already figuring out how his great-grandkids will communicate.”<sup>3</sup> Yet in most societies and in most respects, future stewardship has lost ground over the past half century. What lies ahead matters less and less, and elicits ever less care.

The shift from future to present, from permanence to transience, was well under way a generation ago. Contrasting children’s dolls once clutched lovingly until they disintegrated with disposable Barbie dolls turned in annually for new models, Alvin Toffler’s *Future Shock* descried an accelerated love of evanescence, a propensity to think in terms of immediate returns and consequences.<sup>4</sup> Christopher Lasch’s *Culture of Narcissism* blamed growing self-absorption: “We live these days for ourselves, not for predecessors or posterity”; narcissism was typical of “a society that has lost interest in the future.”<sup>5</sup> Recent observers note “a growing incapacity or unwillingness...to identify with the future,” as one psychologist put it, a tendency to be “less interested in offspring and willing to sacrifice for them.” Few cared about leaving the world in better shape for future generations.<sup>6</sup>

The consequences for natural resources are especially perilous. “We borrow environmental capital from future generations,” the Brundtland Commission concluded, “with no intention or prospect of repaying.” Our descendants “may damn us for our spendthrift ways, but they can never collect on our debt to them. We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions.”<sup>7</sup> As is often said, the present is a ruthless dictator to the future.<sup>8</sup>

This seems paradoxical, for in recent times we have learned a great deal about how to preserve almost everything—endangered species, antiquities, art, archives, human life itself. Technology makes long-term conservation increasingly feasible. The means are there, but the ends are missing. The rationale for long-term stewardship is little discussed, let alone debated, still less realized as state or global policy. In the last few decades a plethora of international conventions have championed stewardship of resources for future generations, yet these principles are seldom if ever put into practice.

In this essay I attempt to explore why we have lost sight of the rationale for future stewardship that was well articulated from the late 18th century through the early 20th and have, by default, allowed the demands of the insistent present to dominate government and corporate action.

## Sacred and Secular Concerns for the Future

Awareness of distant futures is a feature of most of the world's religions, which sanctify all time past and present.<sup>9</sup> Not that such awareness necessarily connotes much concern or responsibility; "the breathing in and out of the universe by Brahma every four hundred million years," Elise Boulding tartly notes, "is not an image of the future calculated to motivate record-keeping, planning, and action."<sup>10</sup> Yet distinctions between sacred and secular time are largely recent and are not even now embedded in popular thinking. In Judeo-Christian tradition, the length of the secular future varied with the felt imminence of the Second (or First) Coming. Were the end potentially far off, human responsibility to maintain a viable earth might stretch near to infinitude. But if the end were nigh, stewardship was pointless. Nor do doomsayers lament the breakdown of civil order consequent on neglect of the future; indeed, they often welcome signs of social disintegration as confirming the approach of the apocalypse.<sup>11</sup>

Fears of mounting collapse in the wake of the French Revolution engendered the first reasoned arguments for—as distinct from mere attachment to—long-term social stability. Many, to be sure, had always detested change and enjoined permanence as just and pious; but this preference was largely taken for granted. Only toward the end of the 18th century, when heirs of the Enlightenment foresaw an indefinite continuance of scientific and social advance, did they begin to consider change historically, and to treat nations as persisting, though changing, social organisms.<sup>12</sup> In such societies, the organic community or commonwealth was treasured as the enduring, if not immortal, possession of all successive generations, not of the present alone. Concern for the future entailed respect for the past, and regard for both past and future were essential to a healthy and harmonious present.

The most eloquent avowal of this perspective was the Irish statesman and philosopher Edmund Burke's *Reflections on the Revolution in France* (1790). In Burke's view, French Jacobins were so inflamed against tradition that they rejected the whole of their past and were thus careless of the future. By contrast, the English, with due regard for what their forebears had bequeathed, took care to cherish what had come down to them and to pass it on to their descendants. And since the creation of such social institutions required one but many lifetimes, a veneration of the past and a regard for the future were essential for their perfection and to their survival.

Bereft of the virtues of English organic traditionalism, in Burke's view, was the French revolutionary cult of newness. "People will not look forward to posterity, who never look backward to their ancestors.... Duration is no object to those who think little or nothing has been done before their time, place all their hopes in discovery, [and] think...that there needs no principle of attach-

ment, except...present conveniency.” As a consequence, “the temporary possessors and life-renters [in the French state], unmindful of what they have received from their ancestors, or of what is due to their posterity...act as if they were the entire masters [and] cut off the entail, or commit waste on the inheritance...hazarding to leave to those who come after them a ruin instead of a habitation—and teaching those successors as little respect for their contrivances, as they themselves respected the institutions of their forefathers.” Hence “the whole chain and continuity of the commonwealth [are] broken. No one generation link[s] with the others” and life is meanly attenuated. “Men...become little better than the flies of a summer.”<sup>13</sup>

Only “a contract...not to be dissolved by fancy” can avert such a calamitous rupture. To forge that contract takes far longer than any single lifetime. And “as the ends of such a partnership cannot be obtained in many generations, it becomes a partnership not only between those who are living, but between those who are living, those who are dead, and those who are to be born.” Burke accepts the need for reform but rebukes those impatient for it. “Circumspection and caution are a part of wisdom” in restoring a building; no less so “when the subject of our demolition and construction is not brick and timber, but sentient beings.... A process of this kind is slow,” and so it should be. “It is not fit for an assembly, which glories in performing in a few months the work of ages.” He assails alike the presentism of Thomas Paine (“we owe nothing to the future”) and of Thomas Jefferson (“the dead have no rights”).<sup>14</sup>

*Adherence to community implies reaching into a past and a future beyond what any one person can experience, a leap of imagination into two temporal unknowns. To thus extrapolate from personal experience is an essential act of faith without which life would be shorn of meaning.*

More than a century after Burke, the French sociologist Emile Durkheim explained why humans generally rely on a construed sense of immortal continuity, an identity that transcends the duration of individual lifetimes. (Such construction comes naturally, for “our elders have talked their memories into our memories until we come to possess some sense of a continuity exceeding and traversing our own individual being.”)<sup>15</sup> Social structure requires enduring communities, entities that outlast individual life spans and attach us to the heritage of our forebears and to the legacy we leave our descendants. Hence, as Burke had said, all communities are compacts between the living, the dead, and the yet unborn. Adherence to community implies reaching into a past and a future beyond what any one person can experience, a leap of imagination into two temporal unknowns. To thus extrapolate from personal experience is an essential act of faith without which life would be shorn of meaning. Only awareness of what we owe to those who preceded and concern for those who

will follow enables us to care enough to plan ahead, both individually and in concert with our fellows.

Such faith begins, Durkheim stressed, with awareness of what we owe to the past. “We speak a language we did not create; we use instruments we did not invent; we claim rights we did not establish; each generation inherits a treasury of knowledge that it did not itself amass. We owe these varied benefits of civilization to society, and...we know...they are not of our own making.” And we respect and revere them because they add mightily to our lives. They are, indeed, “the source of [man’s] distinctive nature...help and protect him and guarantee him a privileged fate.”<sup>16</sup>

### Conserving Nature and Culture in the 19th and 20th Centuries

The virtues of regard for both past and future preached by Burke and explained by Durkheim were widely accepted and extolled during the century between them. Nineteenth-century circumstances were generally congenial to doctrines of stewardship, on behalf of individuals and nations alike. Religious piety enjoined concern for the long-term moral and social consequences not only of deeds but of thoughts. Divine judgment in the hereafter became a still more potent promise and threat, as science made every recorded act and impulse retrievable. “The air itself is one vast library, on whose pages are forever written all that man has ever said,” famously warned the evangelical computer inventor Charles Babbage; “the atmosphere we breathe is the ever-living witness of the sentiments we have uttered,” while earth and ocean “bear equally enduring testimony of the acts we have committed.”<sup>17</sup> Victorian and Edwardian industrialists and city fathers built railroads, aqueducts, and sewer systems, libraries, parks, and gardens intended to endure for centuries to come, not only because they confidently expected to recoup their capital, but from a philanthropic regard for the future. “Society was working not for the small pleasures of today,” explained the economist Keynes, “but for the future security and improvement of the race.”<sup>18</sup> The immensely enlarged past unfolded by geologists and paleontologists seemed to many to herald a no less extended human future.

Conserving civilization’s precious material and intangible legacies for posterity came to be considered crucial to national identity and pride, notably in the wake of Herder’s path-breaking recognition of folklife, folklore, and folk structures as iconic to collective identity.<sup>19</sup> But the greatest stimulus to the doctrine of future stewardship was a dawning recognition of the extent of human impact on the natural environment, the threats thereby posed to sustainability, and the need for reform lest future generations inherit a ruined and lifeless earth.

The great pioneer of this insight was the 19th-century New England polymath George Perkins Marsh. Marsh's classic *Man and Nature* (1864) was the first text to cast doubt on, and then to overturn, the then-dominant view that lauded human agency, in obedience to divine command and to civilized advance, for transforming raw nature into an ever more fruitful and productive earth. Above all in Marsh's America, it had previously been a positive virtue, as well as the national destiny, to transform the unproductive wilderness into fields and pastures, towns and cities.

To the contrary, rejoined Marsh, many of mankind's so-called improvements—the felling of trees for timber, the ploughing of soils for intensive agriculture, the damming of rivers for power and industry—had subverted the balance of nature through deforestation and soil erosion, accentuating extremes of flooding and drought, and destroying the ecological stability of watersheds. Both the deliberate and the unintended consequences of reckless developmental greed, undertaken with thought only for the present, were fateful, even fatal. Marsh's apocalyptic warning resounded throughout both the New and the Old World—

*[In] parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe...causes set in action by man have brought the face of the earth to a desolation almost as complete as that of the moon.... The earth is fast becoming an unfit home for its noblest inhabitant, and another era of equal human crime and human improvidence...would reduce it to such a condition of impoverished productiveness, of shattered surface, of climatic excess, as to threaten the deprivations, barbarism, and perhaps even extinction of the species.<sup>20</sup>*

The root cause, in Marsh's view, was lack of concern for the future. "Man has too long forgotten that the world was given to him for usufruct alone, not for consumption, still less for profligate waste." For the sake of our offspring we must mend our prodigal and thriftless ways. Above all, this required forest conservation. "The preservation of existing woods, and the far more costly extension of them where they have been unduly reduced, are among the most obvious of the duties which this age owes to those that are to come." Marsh felt such stewardship "especially incumbent upon Americans" who were deeply indebted to pioneer forebears' "toils and sacrifices," a debt repayable only "by a like self-forgetting care for the moral and material interests of our own posterity."

To heed the future, Americans had first to be more mindful of the past. A restless mobility severed them from home, from forebears, and from tradition. "It is rare that a middle-aged American dies in the house where he was born, or an old man even in that which he has built," noted Marsh. "This life of incessant flitting is unfavorable for the execution of permanent improvements."<sup>21</sup> Farmers shunned tree planting because trees grew slowly: "the longest life [of

any individual owner] hardly embraces the seedtime and the harvest of a forest, the value of its timber will not return the capital expended and the interest accrued” for many generations. To plant trees “on a farm he expects to sell, or which he knows will pass out of the hands of his descendants,” was poor economy. Hence “the planter of a wood must be actuated by higher motives than those of an investment”—namely, the future well-being of the wider community. And such altruism would serve the present too, Marsh argued; for setting “an approximately fixed ratio” between woodland, pasture, and arable land would reduce the “restlessness” and “instability” of American life. “The very fact of having begun a plantation would attach the proprietor more strongly to the soil for which he had made such a sacrifice.”

Marsh initially trusted “enlightened self-interest [to] introduce the reforms, check the abuses, and preserve us from an increase of [the] evils” that he had listed. Unlike Old World serfs, American yeomen owned the land they tilled and could reap the benefits of their own improvements. But selfish individualism, the lure of instant profits, and growing corporate monopoly dimmed Marsh’s hopes. Unless it were “his pecuniary interest to preserve them, every proprietor will fell his woods.” Only public control could curb maltreatment of nature, protect national resources, and conserve the future commonweal. To be sure, government power spawned official abuse. “But the corruption thus engendered, foul as it is, does not strike so deep as the rottenness of private corporations.”<sup>22</sup> Enlightened public management was required to prevent injustice today, desolation tomorrow.

*The last decades of the 19th century saw the enactment of unprecedented regulatory controls over environmental resources, notably forests and river regimes. And in a striking reversal of attitudes toward nature, these decades also saw the inception of park and forest reserves explicitly intended to preserve wild and untouched nature for aesthetic and spiritual refreshment forever.*

Marsh’s prescribed controls flew in the face of customary faith in individual liberty and free enterprise. But his warnings came as a thunderbolt to foresters, land and water engineers, and concerned statesmen in much of the world. In America, the much-heralded end of the frontier made the pace of environmental loss particularly noticeable—and especially alarming, as was the looming threat of a timber famine. Moreover, the industrial pillage and conspicuous waste of the post-Civil War era roused much disquiet. The last decades of the 19th century saw the enactment of unprecedented regulatory controls over environmental resources, notably forests and river regimes. And in a striking reversal of attitudes toward nature, these decades also saw the inception of park and forest reserves explicitly intended to preserve wild and untouched nature for aesthetic and spiritual refreshment forever. So

canonical became the credo of future good that even the most avaricious get-rich-quick resource strippers deployed the rhetoric of stewardship for posterity.<sup>23</sup>

Future-oriented public policy-making peaked with President Theodore Roosevelt's official blessing to U.S. forestry chief Gifford Pinchot's national conservation program. Profoundly influenced by *Man and Nature* in his youth, Pinchot like Marsh aimed to husband and improve nature not only for today but for generations to come. And like Marsh, Pinchot sought government ownership to save public resources from private interest and corporate greed, for "the concentration of natural wealth...is one of the greatest of Conservation problems; monopoly of natural resources was only less dangerous to public welfare than their actual destruction." At the start of his forestry career in 1891 "not a single acre of Government, state, or private timberland was under systematic forest management," for "it had not dawned upon [Americans] that timber can be cut without forest destruction, or that the forest can be made to produce crop after crop."<sup>24</sup>

Above all, Pinchot was aghast at grab-and-get-out speculators and lumbermen who ignored the future because, as they and their congressional allies put it, the future had done nothing for them. Pinchot's devotion to the future, his visions of *perpetual* timber supply, *perpetual* forest cover, so alarmed the forestry industry that he had to parry the "misconception that conservation means nothing but the husbanding of resources for future generations." The present mattered as well, he assured them. But "the purpose of Forestry is to make the forest produce the largest possible amount of whatever crop or service will be the most useful, and keep on producing it for generation after generation of men and trees." He had timber in mind, but his dictum applied just as well to aesthetic and environmental benefits. Early Europeans in America could afford to ignore posterity; when soils were exhausted and forests gone, they and their heirs pulled out and went West.

But now the West was won and wholly engrossed; there was no more land; wasteful destruction must cease, bade Roosevelt and Pinchot in 1908. "The patriotic duty of insuring the safety and continuance of the Nation" meant stewarding natural resources against the no longer tenable "right of the individual to injure the future of the Republic for his own present profit."<sup>25</sup> Pinchot's stewardship ethos embodied W J McGee's classic goal: "the greatest good of the greatest number for the longest time"; it became, for a time, national policy. No generation had the right "wholly to consume, much less to waste, those sources of life without which the children or the children's children must starve or freeze."<sup>26</sup>

The American conservation movement exemplified, indeed inspired, the English economist A. C. Pigou's dictum that "it was the clear duty of govern-

ment” to serve as “trustee for unborn generations as well as for its present citizens” against the “rash and reckless despoliation” of natural resources.<sup>27</sup> He noted that “the whole movement for conservation in the United States is based on this conviction.” Writing in 1920, Pigou found “wide agreement that the State should protect the interests of the future” to offset, at least “in some degree...our preference for ourselves against our descendants.” It was clear to him, as it had been to Marsh, that the time horizon of commerce was too short for enduring public interest; hence “the proper role of government in capitalistic societies,” as Lester Thurow recently reiterated, “is to represent the interest of the future to the present.”<sup>28</sup>

### The Attenuated Postwar Future

Eighty years since Pigou, however, presentist bias is more than ever entrenched in popular attitudes and public policy. The idea of equity between generations remains the unrealized dream of a small minority.<sup>29</sup> This seems paradoxical, for scientists—ecologists, nuclear engineers, geneticists—have at the same time become more and more aware of how present actions pile up consequences for the unforeseeable future. For example, radiation damage has been shown to afflict the great-grandchildren of people exposed. In a risk authority’s telling illustration, “the injured of Chernobyl, years after the catastrophe, are not even all *born yet*.”<sup>30</sup>

The environmental well-being of our great-grandchildren can to some extent be planned for. But that of much remoter descendants is far more difficult, yet perhaps no less critical to secure. We are ever more aware that current actions have very long-term consequences, and that their impacts for good and for ill need to be factored into what we do. But deciding what precautions to take against nuclear byproducts that remain toxic for 15,000 human generations is exceedingly difficult. The United States has led the search for practical solutions to and realistic scenarios for this daunting problem.<sup>31</sup> But plans to bury nuclear waste in leakproof containers in strata guaranteed geologically stable for 10,000 years have proved hard to activate given anxieties over site selection, transport, and other uncertainties. And even assuming social stability and continuity thus far unprecedented, 10,000 years seems a lamentably brief time-span, since radioactive carbon-14 is lethal in air or groundwater for a million or more years.<sup>32</sup> Whatever the outcome, it is inspiring that a federal appeals court has expressed concern for American lives hundreds of thousands of years hence<sup>33</sup>—the farthest future publicly envisioned since Henry Clay in 1850 reminded fellow senators that “the Constitution of the United States was made not merely for the generation that then existed, but for posterity—unlimited, undefined, endless, perpetual posterity.”<sup>34</sup>

For the most part, however, future concern dwindles in inverse proportion to the pressing demands of the voracious present.<sup>35</sup> Advocates of intergenera-

tional equity are far outnumbered by economists who consider market forces and individual interests adequate guarantors of environmental and social heritage,<sup>36</sup> assume that “future generations are likely to be incomparably richer than people alive today,”<sup>37</sup> and rely on future technological miracles to deal, more cheaply and efficiently than can now be done, with our toxic legacies of nuclear waste, land and air and water pollution, lethal additives, corporate bankruptcies, and state indebtedness.<sup>38</sup>

Environmentalists, theologians, philosophers, and heritage managers implore us to have a care for the future, which should matter to us as both biological and cultural progenitors. “Who experiences their child’s conception and birth,” asks Benedict Anderson, “without dimly apprehending a combined connectedness, fortuity, and fatality in a language of ‘continuity?’”<sup>39</sup> The visionary Stewart Brand promotes a long-term mind-set through enduring collective projects, echoing the multi-centuries’ construction of medieval cathedrals and the 999-year property leases of Victorian and Edwardian England. One such embodiment of deep time is Daniel Hillis’s 10,000-year clock, installed in London’s Science Museum, that ticks just once a year, bongs once a century, and whose cuckoo comes out every millennium.<sup>40</sup>

To generate a culture of permanence is a herculean if not an insuperable task, however, for it runs counter to *homo sapiens*’ built-in short-term thinking. The “human brain evidently evolved to commit itself emotionally only to...two or three generations into the future,” writes the biologist Edward O. Wilson; to—

*think in this short-sighted way...is a hard-wired part of our Palaeolithic heritage. For hundreds of millennia those who worked for short-term gain...lived longer and left more offspring—even when their collective striving caused their chiefdoms and empires to crumble around them. The long view that might have saved their distant descendants required a vision and extended altruism instinctively difficult to marshal. The great dilemma for environmental reasoning stems from this conflict between short-term and long-term values.*<sup>41</sup>

That care for the distant future may be essential to human survival is only now, thanks to bioterrorism and nuclear residues, transparently evident. Ecological counselors rightly lament human shortsightedness; echoing Marsh, they fear that unless we mend our ways the earth will be a wasteland within a few centuries or less.<sup>42</sup>

But who cares? Does the public share such concern? Who now echoes the angst of the New York planetarium visitor of the 1930s who asked a lecturer at the end of his talk on the sun, “Young man, did you say that life on earth would come to an end in three million years?” “No, I said three *billion* years.” “Oh; what a relief!”<sup>43</sup> Who now would share James Jeans’s 1928 expectation of two billion years’ survival as “taking a very gloomy view of the future?”<sup>44</sup>

Environmental economists calculate one future discount rate for parents exclusively concerned with the welfare of their own immediate progeny, another for those whose concern extends to all humanity, altruists who “reap psychic satisfaction” from having assets transferred to the future, both by themselves and by others.<sup>45</sup> But unlike the Enlightenment philosopher Kant, who believed that humans “could not be indifferent even to the most remote epoch,” most moderns sleep undisturbed by what may happen long after their death.<sup>46</sup> “Most human beings do not care in the least about the distant future,” Charles Galton Darwin concluded half a century ago. “Most care about the conditions that will affect their children and grandchildren, but beyond that the situation seems too unreal...and uncertainties are too great.”<sup>47</sup> After great-grandchildren “few men can project their concerns,” held a philosopher in 1972. If some cared about their posthumous reputation, “most of us know that we will be anonymous to future generations and have no reputations to protect.”<sup>48</sup>

Today the distant future seems even less real. “What [most] people really want to know,” concludes one environmental economist, “is how things will be for their grandchildren.”<sup>49</sup> Evidence even of such limited altruistic views is, however, at best scanty. Much of it is merely anecdotal. The economists cited above offer no evidence for selflessness, noting only that they “know numerous individuals who plan never to have children and yet profess great sympathy for the fate of posterity.”<sup>50</sup> (It is, of course, one thing to profess sympathy for posterity, quite another to act on it.) My own experience over the last half-century suggests such sympathy has declined. In the early 1950s most of my college students said the future they cared about extended between 150 to 200 years ahead—as long as anyone they themselves might know and love would care about those younger than themselves. A substantial minority claimed they cared what might happen over the unlimited future. Many young people today disdain such long-term horizons. The “future” that concerns them is tomorrow, next weekend, perhaps next year. Few have any sense of themselves as future grandparents, even as parents.<sup>51</sup>

The whole 19th-century bourgeois ideal of life as a progressive career is now becoming obsolete, just as the notion of remaining in one job, or even with the same employer, is outmoded.<sup>52</sup> Attention spans become more and more abbreviated; speed is glorified, what would once have been chided as reckless irresponsibility is now lauded as swift, decisive action. The contemplated future gets ever more attenuated. “When I was a child,” says Daniel Hillis, “people used to talk about what would happen by the year 2000. Now, thirty years later [in 1993], they still talk about what would happen by the year 2000. The future has been shrinking by one year per year for my entire life.”<sup>53</sup> “When I pronounce the word future,” a poet puts it, “the first syllable already belongs to the past.”<sup>54</sup>

## Spending Our Kids' Legacy

For today's generation the future is less predictable, and more bleak, than for any in at least two centuries. The great majority of North Americans and West Europeans polled in 2002 believed that their children would be worse off than they are;<sup>55</sup> two-thirds of children and young people themselves, in a 1996 Australian national opinion poll, expected their quality of life by 2010 to decline; two out of three British youths consider their prospects poorer than their grandparents, who had suffered World War II bombs, rationing, and unimaginable loss.<sup>56</sup> Since the future is not only uncertain but apt to be both more perilous and less attractive than the present, it is better not to dwell on it at all; we turn a deaf ear to our successors, lest we vilify, disown, abandon, or devour them.<sup>57</sup> Increasingly in the West, children are felt to be a burden; people who have them "are in worse economic shape than they've ever been in," judges a market analyst. "Having a child is now the best indicator" of imminent deep financial trouble.<sup>58</sup>

Any future that does compel attention is apt to be our own, not our children's, much less that of humankind, let alone of planet Earth in eons to come. Long gone are such iconic texts as Olaf Stapledon's *Last and First Men; a Story of the Near and Far Future* (1931) that explored continuity with extremely remote futures. Scholars conjuring up images of humanity's lot a thousand years hence speak to few beyond their own arcane subdiscipline.<sup>59</sup> The vogue for time capsules conveying artifacts and images of our own era to people millennia hence peaked between the 1930s and the 1950s and has since dwindled into obscurity.<sup>60</sup>

*In the past, legacies like reputations were meant to be handed down intact; estates were not spent, they were stewarded. Except among environmentalists, stewardship is now out of fashion. Instead of conserving family heritage, we consume it. Inheriting and transmitting give way to self-indulgence, since many find any future too uncertain to be worth planning for.*

In the past, legacies like reputations were meant to be handed down intact; estates were not spent, they were stewarded. Except among environmentalists, stewardship is now out of fashion. Instead of conserving family heritage, we consume it. Inheriting and transmitting give way to self-indulgence, since many find any future too uncertain to be worth planning for. Nuclear fears led some young people in the 1950s to reject parenthood, to eschew mortgages and life insurance—even refusing, Alan Brien recalls, to "make any appointments of any kind more than a week ahead." So imminent seemed the end that it was pointless to plan for any future. Gloomy prognoses long prevailed; one American high school student in three, surveyed in the late 1980s, expected

nuclear or biological annihilation within their lifetime.<sup>61</sup> Weakened family bonds and disposable wares curtail the handing on of household goods. “Virtually no one buys a home with the idea that it might become a ‘family seat’,” writes Grant McCracken; few household items endure beyond two generations. Unlike our forebears, we rarely envisage descendants as replicas of ourselves.<sup>62</sup>

Decline of belief in a sentient hereafter also weakens posthumous concerns. Few conjure up images of heirs enjoying the legacies we have left them. Instead we muse like mummified Egyptians on what to take with us to the grave: a crowbar and a mobile phone, in case death proves premature; a fire extinguisher, in case divine justice miscarries; or, cannily, a proof of longevity, such as a 100th-birthday telegram from Buckingham Palace. Treasures are stored up less for heirs than for our own futures. “We get them, bear them, breed, and nurse” them, grumbled the American poet John Trumbull, echoing Joseph Addison’s *Spectator*; “What has posterity done for us?”<sup>63</sup> As self-regard supplants intergenerational generosity, concern for the distant future “bespeaks a sort of mental corruption,” in Garrett Hardin’s phrase, a view he found held, by the mid-1970s, “by some of the most radical as well as some of the most reactionary people of our time.”<sup>64</sup> Agonizing over the fate of the future, the historian Robert Heilbroner could think of “no argument based on reason [that] will lead me to care for posterity or to lift a finger in its behalf.”<sup>65</sup>

The shift from stewardship to self-gratification is summed up in a cartoon that shows expectant heirs at a reading of the deceased’s will: “Being of sound mind and body, I blew it all.” The connoisseur who once aimed to leave his children a noble cellar no longer buys wine that will mature after his death; less and less wine is now grown to age. The tailor or shoemaker who once clinched a sale with “This will see you out” today has customers who prefer to outlast their wardrobes. “I don’t want long-term bonds,” an old woman tells her broker; “I’m so old I don’t even buy green bananas any more.” To survive long enough means having a future short enough to need no plans.

We increasingly take longevity as our inborn right. A service called “Cards from Beyond” will send your posthumous birthday greetings, with messages like “Take joy in the fact that those of us who have gone on before would give anything to be in your shoes.” A few hopeful souls await being thawed from cold storage when a cure is found for what today would have killed them. Cryonic salesmen reckon most people would opt to be frozen if assured they could resume conscious life, however far in the future.<sup>66</sup> “The great problem with the future,” in Brand’s summary, “is that we die there. This is why it is so hard to take the future personally, especially the longer future, because that world is suffused by our absence. Its very life emphasizes our helpless death.”<sup>67</sup>

## The Point of Posterity

What is needed is a modern restatement of Burke's principle.<sup>68</sup> Concern for future generations is not, or at least not mainly, a matter of altruistic self-sacrifice on behalf of people we will never know and who can do nothing for us. Nor is it simply a matter of calculating intergenerational equity, in John Rawls's terms, "balancing...how much [people] would be willing to save for their immediate descendants against what they feel entitled to claim of their immediate predecessors."<sup>69</sup> It is rather a matter of enriching our own lives with depth and purpose. "Human beings have a basic and pervasive need...to extend themselves," holds another philosopher, "to identify themselves as part of larger, ongoing and enduring processes, projects, institutions, and ideals." For "without the idea of posterity"—biological or intellectual—"our lives would be confined, empty, bleak, pointless and morally impoverished."<sup>70</sup> To say, as Rawls does, that "we can do something for posterity but it can do nothing for us," short-changes our imaginative capacity.<sup>71</sup> As beings uniquely capable of envisaging a future, humans have become dependent on doing just that.

Concern for the world to be inherited by generations to come was an Enlightenment obsession. Posterity replaced God as a judge and justifier of human behavior; personified, addressed as a deity, invoked in accents of prayer, posterity was the court of final appeal. It was invoked in the preamble to the United States Constitution and in the speeches of all the American founding fathers. The absence of posterity was unimaginably horrific. Were it known that humanity would become extinct (through a catastrophic comet collision, for example), Diderot predicted that "men would straightway rush into evil courses."<sup>72</sup>

Diderot's doom-laden prophecy is realized in P.D. James's *The Children of Men*, positing a world in which from 1995 on no children are born or conceived. Suicide is rife, lassitude and depression universal. Her protagonist "can understand how the aristocrats and great landowners with no hope of posterity leave their estates untended.... Our minds reach back through centuries for the reassurance of our ancestry, and without hope of posterity, for our race if not for ourselves, without the assurance that we being dead yet live, all pleasures of the mind and senses seem...no more than pathetic and crumbling defences shored up against our ruin.... Man is diminished if he lives without knowledge of his past; without hope of a future he becomes a beast."<sup>73</sup>

It was "the man within the beast" that led Adam Smith to elevate the rights of all humanity above immediate personal well-being, and enabled Heilbroner, glimpsing, like James, "the unbearable anguish" of a universe void of human life, to transcend narrow rationality.<sup>74</sup>

The preconditions for future concern are, however, highly demanding. In much of the world, poverty forces an insistence on immediate needs. To feed their children now, Mexican peasants have no choice but to forfeit resources whose loss those children may later bemoan. “We have to cut down trees to feed our families...so that our children can have enough to eat and go to school so they can have a future and more awareness,” explained Eligio Corona. “The tragedy...is that, to feed his children today, he has to destroy that which would give them sustenance tomorrow.”<sup>75</sup>

“People take the long view when they feel a commitment to...posterity—their children and other people’s children—and therefore see the need for actions to benefit the distant future.” But they can afford to take that view, adds a management expert, only “when they believe the rules of the game are fair [and that] they will share equitably in the returns.”<sup>76</sup>

Half a century ago the future was a bright and shining promise. Scientific progress, faith in social engineering, and impatience with tradition engendered countless cornucopian forecasts. The archetypal future, noted architectural historian Reyner Banham, was “a city of gleaming, tightly clustered towers, with helicopters fluttering about their heads and monorails snaking around their feet; all enclosed...under a vast transparent dome,” where life would be “unmitigated bliss.” Sometime around the late 1960s that modernist utopia disappeared. The future became a thing of the past. Visions of the white heat of technology gave way to hand-lettered tracts extolling pastoral scenes of “windmills and families holding hands.”<sup>77</sup> Heritage, roots, and historic preservation made the past our favored abode to escape the fears and the perils of the present. The nostalgized past, I noted, was by the 1980s “the foreign country with the most profitable and rapidly growing tourist trade of them all.”<sup>78</sup>

Could investment in the future now perhaps offer comparable rewards? That the future has become more open and less predictable, uncertain rather than foreordained, ought not to deter but to encourage engagement with it. We can still hearten venturers to chart ways beyond the present pall of gloom. Biologists suggest that biomedical research within the next quarter century may double our lifetimes; our grandchildren may coexist with five generations of their descendants. Physicists float prospects of being “truly at home in the universe” 50 years from now, when we’ll probably know more about its history and properties “than we know now about...the surface of our planet.”<sup>79</sup> Astronomer Martin Rees foresees a future shaped by human decisions that infuse the universe with “a teeming complexity of life beyond what we can even conceive.”<sup>80</sup>

That the future, near and far alike, holds huge risks is undeniable. There is a small but finite possibility that we will “not survive the machinations of a technologically very knowledgeable, very depressed Luddite.”<sup>81</sup> Rees himself fears

that bioterror or bioerror will lead to a million casualties in a single event within the next 15 years.<sup>82</sup> Let us start coping with rather than shrinking from potential anthropogenic calamity, just as forward-looking science strives to deflect potential natural catastrophes like asteroid impacts and comet collisions. A century after Theodore Roosevelt bade us heed posterity's needs, another president's State of the Union message echoed his "responsibility to future generations...to build a better world for our children and grandchildren."<sup>83</sup> To carry out this pledge requires renewal of the stewardly commitment that inspired the first American conservation movement. We lend force to that inspiration when we see how we enrich our own lives, as well, through communion with the enduring collective humanity to which we owe our being and belonging.

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